EXAIR® Corporation

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OPERATING INSTRUCTIONS FOR DIGITAL SOUND LEVEL METER

INTRODUCTION

EXAIR's Model 9104 Digital Sound Level Meter measures and displays sound pressure levels in dB from 35 to 130dB. The LCD is backlit for viewing readings in dimly lit areas. User selectable features include Frequency Weighting ('A' and 'C'), Response Time (Fast and Slow), Max Hold, and Range (High and Low). Careful use of this meter will provide years of reliable service.

WARRANTY

EXAIR's 1 Year Warranty applies to all accessories and electrically powered products.

SAFETY

Read the following safety information carefully before attempting to operate or service the meter. Use the meter only as specified in this manual; otherwise, the protection provided by the meter may be impaired.

Environmental Conditions

- Altitude up to 2000 meters
- Relative Humidity: 90% max.
- Operating Temperature: 32 to 104°F (0 to 40°C)

Maintenance and Cleaning

- Repair or servicing not covered in this manual should only be performed by qualified personnel.
- Periodically wipe the case with a dry cloth. Do not use abrasives or solvents.

CALIBRATION AND REPAIR SERVICES

EXAIR offers repair and calibration services for this Digital Sound Level Meter. EXAIR also provides NIST certification. Contact an Application Engineer for information on calibration services available for this product. EXAIR recommends that annual calibrations be performed to verify meter performance and accuracy.

SPECIFICATIONS

Display	4-digit (4000 count) backlit LCD
Display update rate	0.5 seconds
Microphone	0.5" Electret condensor
Measurement Bandwidth	31.5Hz to 8KHz
Dynamic range	65dB
Measurement Range	35 to 130dB (Low: 35 to 100; High: 65 to 130dB)
Frequency weighting	'A' and 'C' (selectable)
Accuracy / Resolution	± 1.5dB (under reference conditions) / 0.1dB
Standards	Meets ANSI and IEC Type 2 SLM standards
Maximum Hold decay time	<1dB / 3min
Response time	Fast: 125 milliseconds / Slow: 1 second
Calibration source required	1KHz sine wave @ 94dB
Power	9V Battery
Battery life	50 hours (typical); low battery indicator alerts user
Automatic power off	After approx. 15 minutes of inactivity
Operating temperature	32 to 104°F (0 to 40°C)
Operating humidity	10 to 90% RH
Storage temperature	14 to 140°F (-10 to 60°C)
Storage humidity	10 to 75% RH
Dimensions/weight	9.45 x 2.68 x 1" (240 x 68 x 25mm) / 6.75oz (210g)

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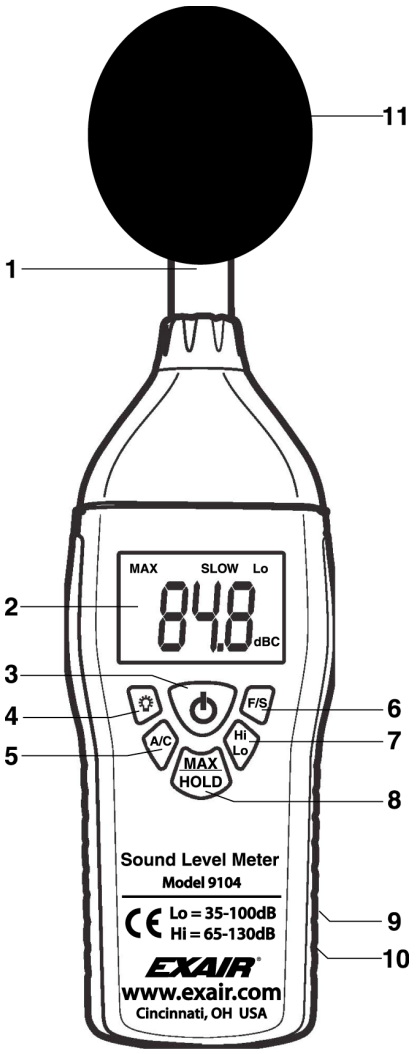
DIGITAL SOUND LEVEL METER DESCRIPTION

1. Microphone
2. 4-digit LCD Display
3. ON-OFF button
4. LCD Backlight button
5. Frequency weighting selection button
6. Response time selection button
7. Range selector button
8. Max Hold/Data Hold selector button
9. Battery compartment on rear
10. Calibration pots in battery compartment
11. Removable windscreen



MEASUREMENT CONSIDERATIONS

- Wind blowing across the microphone increases the noise measurement. Use the supplied windscreen to cover the microphone when applicable.
- Calibrate the instrument if the meter has not been used for a long period of time. Contact an Application Engineer for more information.
- Do not store or operate the instrument in areas of high temperature or humidity.
- Keep meter and microphone dry.
- Avoid severe vibration.
- Remove the battery when the meter is to be stored for long periods of time.

OPERATION

1. Power the meter by pressing the power button. The meter will begin displaying sound level readings. If the LCD does not switch on, check the 9V battery located in the rear battery compartment.
2. Hold the meter in hand facing the microphone toward the source of the sound to be measured.
3. View the measurement on the meter's LCD display. An indication of OVER means that the measurement is out of range. Toggle the 'Hi' (65 to 130dB) and 'Lo' (35 to 100dB) measurement ranges using the HI/LO button. For measurements between 65 to 100dB, either range can be used.

'A' and 'C' Frequency Weighting

Use the 'A/C' button to select 'A' or 'C' frequency weighting. With 'A' weighting selected, the frequency response of the meter is similar to the response of the human ear. 'A' weighting is commonly used for environmental or hearing conservation programs such as OSHA regulatory testing and noise ordinance law enforcement. 'C' weighting is a much flatter response and is suitable for the sound level analysis of machines, engines, etc. Most noise measurements are performed using 'A' Weighting and SLOW Response.

'FAST' and 'SLOW' Response Time

Use the 'F/S' button to select FAST (125 ms) or SLOW (1 second) response time. Select FAST to capture noise peaks and noises that occur very quickly. Select the SLOW response to monitor a sound source that has a consistent noise level or to average quickly changing levels.
Select Slow response for most applications.

'Hi' and 'Lo' Range Selections

Use the 'Hi/Lo' button to select the appropriate range. If the measurement is in the range of 35 to 100 dB, use the 'Lo' range. If the measurement is between 65 and 130dB, use the 'Hi' range. For measurements between 65 and 100dB, either range can be used. If the display flashes the OVER icon, press the range button to toggle the range.

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Max Hold

In this mode, the meter only updates the LCD when a higher reading than the one presently on the display is detected. Select MAX HOLD by momentarily pressing the MAX HOLD button. The meter displays the MAX icon when in the MAX HOLD mode. Press the MAX HOLD button again to exit this mode (the MAX indicator will switch off).

Data Hold

To freeze a displayed reading, press and hold the MAX HOLD button until the MAX and HOLD display icons appear. To release the display and return to the normal operating mode, press and hold the MAX HOLD button until the MAX and HOLD icons switch off.

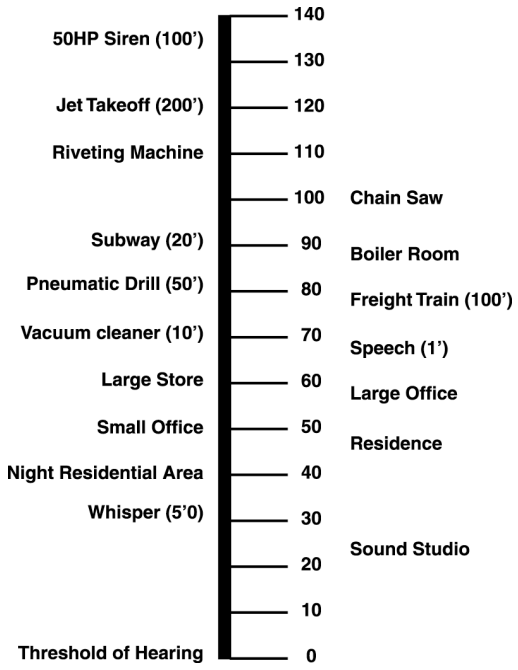
Backlight button

The LCD is equipped with backlighting for easier viewing, especially in dimly lit areas. Press the backlight button to turn the backlight on. Press again to turn the backlight off. The backlight does not have an automatic power down function. Battery life will decrease more rapidly when used.

Battery Replacement

When the low battery icon **BAT** appears on the LCD, replace the 9V battery as soon as possible. The battery compartment cover is located on the rear of the meter. Remove the Phillips screw to loosen the cover. Slide the battery compartment cover off, change the battery, and replace the compartment cover.

TYPICAL A-WEIGHTED SOUND LEVELS



If you have any questions or problems, please contact:

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